DOCUMENT RESUME

ED 443 045 CG 030 110

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TITLE Relationship between Attributional Errors and At-Risk Behaviors among Juvenile Delinquents.
PUB DATE 2000-04-25
NOTE 21p.; Paper presented at the Annual Conference of the American Educational Research Association (New Orleans, LA, April 24-28, 2000).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adolescents; Behavior Problems; *Delinquency; Emotional Adjustment; Guns; *High Risk Students; Juvenile Gangs; Males; Predictor Variables; Secondary Education; Sexuality; Substance Abuse; Violence

ABSTRACT

The purpose of this study was to determine whether at-risk behaviors (e.g., substance abuse, gun ownership, sexual activity, and gang membership) are associated with violence attribution errors, as measured by Daley and Onwuegbuzie's (1995) Violence Attribution Survey, among 82 incarcerated male juvenile delinquents. Analysis revealed that the following variables contributed significantly to the prediction of the number of attributional errors made: selling drugs; believing that men have a right to expect sex from women; frequency of alcohol use; having friends who died violently; and bringing a gun to school. The present findings provide support for Daley and Onwuegbuzie's (2000) violence attribution theory, suggesting that adolescents who engage in at-risk behaviors are prone to making attributional errors. Specifically, when an adolescent engages in an antisocial behavior, the consequences of the behavior help to determine whether attributional errors will prevail. To the extent that responses to cognitive appraisals in general and attributions in particular regulate prosocial and antisocial behaviors that are mediated by emotions, interventions such as affective skills development and attribution retraining may be effective in reducing the onset of at-risk behaviors among adolescents. This occurs primarily because these interventions are addressing antecedents of at-risk behaviors at an earlier stage of the cue-attribution-emotion-behavior-attribution cycle, and therefore have the potential not only to reduce at-risk behaviors, but also to help adolescents develop more adaptive emotions. (Contains 22 references.) (MKA)

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ED 443 045

Running head: AT-RISK BEHAVIORS AMONG JUVENILE DELINQUENTS

Relationship Between Attributional Errors and At-Risk Behaviors Among Juvenile Delinquents

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Paper presented at the annual conference of the American Educational Research Association, New Orleans, LA, April 25, 2000.

CG 30110

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Abstract

The purpose of the present study was to determine whether at-risk behaviors (e.g., substance abuse, gun ownership, sexual activity, and gang membership) are associated with violence attribution errors, as measured by Daley and Onwuegbuzie's (1995) Violence Attribution Survey, among 82 incarcerated male juvenile delinquents. A multiple regression analysis revealed that the following five variables contributed significantly ($F[5, 76] = 4.84$, $p < .001$) to the prediction of the number of attributional errors made: selling drugs, believing that men have a right to expect sex from women, frequency of alcohol use, having friends who died violently, and bringing a gun to school. These variables explained nearly one-fourth of the variance in the number of attributional errors made. The present findings provide support to Daley and Onwuegbuzie's (2000a) violence attribution theory, suggesting that adolescents who engage in at-risk behaviors are prone to making attributional errors.

Relationship Between Attributional Errors and At-Risk Behaviors Among Juvenile Delinquents

There is little doubt that violence continues to be a significant problem among today's youth. Indeed, there has been a marked increase in the prevalence and severity of youth violence in the past decade. In particular, according to the Federal Bureau of Investigation (1995), since 1985, the overall crime rate among adolescents has increased by 75%, including a 97% increase in aggravated assaults and a 150% increase in murders. Moreover, every five minutes, a child is arrested for a violent crime. Every two hours, a child is murdered. In a single day, 13 children die from guns, and 30 more are wounded (Children's Defense Fund, 1993). In 1994, adolescents under 18 years of age accounted for 19% of all violent crimes reported (Federal Bureau of Investigation, 1995).

According to Callahan and Rivera (1992), 11.4% of high school males own a gun. Even more disturbingly, approximately 15% of high school students carried a handgun to school in the previous year (O'Donnell, 1995). Adolescents frequently also are victims of violent crime: 11.5% and 12.3% are victims of simple assault and aggravated assault, respectively, from non-family offenders--the overwhelming majority (85%) of whom are adolescent peers (Boney-

McKoy & Finkelhor, 1995). Although there is some evidence that the violent crime rate among adolescents finally may have leveled off (Federal Bureau of Investigation, 1996), violent crimes among youth still represent a significant social and clinical problem. Unfortunately, despite a plethora of research in the area of violence and aggression, we still do not understand why our youth continue to become involved in and victimized by violent acts.

Most of the prior research has focused on immutable antecedents of violent behavior (e.g., genetic, biological, familial characteristics). That is, relatively few studies have examined more permeable factors which are susceptible to change. Recently, the area of social cognition in general--attribution theory in particular--appears to offer a viable avenue for research on the antecedents of violent behavior. In particular, Daley and Onwuegbuzie (1995, 1999) provided evidence that as many as 80% of juvenile delinquents tend to make attributional errors when evaluating the behavior of others. Specifically, they frequently ascribe external explanations to individuals' violent actions. It is likely that attributional errors are antecedents to other at-risk behaviors. Yet, to date, this link has not been investigated. Indeed, Graham, Hudley, and Williams (1992) stated that "the

processes relating intentionality judgments to aggressive responding in children have yet to be fully explored" (p. 731). Thus, the purpose of the present study was to determine whether at-risk behaviors (e.g., substance abuse, gun ownership, sexual activity) are associated with violence attribution errors. Daley and Onwuegbuzie (2000a) theorized a cue-attribution-emotion-behavior-attribution cycle, whereby social cues culminate in attributions that drive feelings, which, in turn, serve as precursors to behavior, which, in turn, can affect the onset and consequences of future social cues. According to this conceptualization, juvenile delinquents tend to make attributional errors following negative social encounters, leading to negative emotions and then to at-risk behaviors, the consequences of which affect future attributions. The current investigation sought to test the latter part of Daley and Onwuegbuzie's (2000a) model; specifically, the goal was determine whether at-risk behaviors predict biased attributional tendencies.

Method

Participants

Eighty-two adolescent males, aged 12-18, participated in the study. The sample was drawn randomly from the population of

juveniles incarcerated at correctional facilities located in a large southeastern state.

Instruments and Procedure

Participants were administered the Violence Attribution Survey (VAS) and The Lifestyles, Attitudes, and Perceptions Survey (LAPS). Both instruments were developed specifically for the present study. The VAS is a 12-item questionnaire designed to assess attributions made by the juveniles for the behavior of others involved in a variety of violent acts. Each item consists of a vignette, followed by three possible attributions (person, stimulus, and circumstance) presented in multiple-choice format, and an open-ended question asking the subjects' reason for choosing the response which they did. The vignettes are constructed in such a way as to allow for the perceived plausibility of any one of the three possible attributions.

Because stimulus and circumstance responses represent attributional errors, these two responses were combined and contrasted to person attributions. That is, responses representing external attributions (i.e., stimulus and circumstance) were compared to responses signifying dispositional attributions (i.e., person), such that external attributions were given a score of 1

and dispositional attributions were given a score of 0. Responses to the 12 items of the VAS were summed in order to produce an index of index of attribution toward violence (range 0-12), with high scores being indicative of persons who commit a high proportion of attributional errors and low scores representing individuals who commit a low proportion of attributional errors. For the present investigation, the VAS generated scores which had a classical theory alpha reliability coefficient of .71.

The LAPS is an 86-item questionnaire consisting of a series of open- and closed-ended questions designed to examine the juveniles' attitudes and perceptions regarding a variety of life issues. The LAPS examines several domains, including drug use, sexual behavior, life expectancies, and attitudes towards women.

The scales were reviewed by secondary school teachers and analyzed using Grammatik 5 (Reference Software International, 1992) for readability. Both scales were found to be suitable for readers at a fifth-grade level. Although participants were provided with the actual instrument, each question was read aloud by one of the researchers in order to control for variation in reading skills. Subjects were required to write their responses on the survey forms.

Results

A series of independent *t*-tests, using the Bonferroni adjustment within each class of variables (i.e., substance abuse, school discipline record, behavioral locus of control, gun ownership, sexual activity, attitudes toward women, and gang membership) revealed that (1) juvenile offenders who had never drunk alcohol (M = 5.50, SD = 2.84) made statistically significantly (t = -1.96, p < .05; Cohen's d = .46) fewer attributional errors than did those who had drunk alcohol (M = 6.78, SD = 2.73); (2) juvenile offenders who had taken drugs (M = 5.28, SD = 3.16) made statistically significantly (t = -2.30, p < .05; Cohen's d = .55) fewer attributional errors than did their counterparts (M = 6.80, SD = 2.55); (3) juvenile offenders who had never sold drugs (M = 5.05, SD = 2.82) made statistically significantly (t = -3.50, p < .05; Cohen's d = .80) fewer attributional errors than did their counterparts(M = 7.15, SD = 2.52); (4) juvenile offenders who had never been expelled from school (M = 5.83, SD = 2.73) made statistically significantly (t = -2.00, p < .05; Cohen's d = .41) fewer attributional errors than did their counterparts (M = 6.97, SD = 2.82); (5) juvenile offenders for whom none of their friends had died violently (M =

5.46, *SD* = 2.88) made statistically significantly (t = -2.83, p < .05; Cohen's d = .61) fewer attributional errors than did their counterparts (*M* = 7.10, *SD* = 2.55); (6) juvenile offenders who had never owned a gun (*M* = 5.43, *SD* = 3.12) made statistically significantly (t = -2.26, p < .05; Cohen's d = .52) fewer attributional errors than did their counterparts (*M* = 6.86, *SD* = 2.52); (7) juvenile offenders who had bought a gun to school on at least one occasion (*M* = 6.01, *SD* = 2.79) made statistically significantly (t = -2.18, p < .05; Cohen's d = .55) fewer attributional errors than did their counterparts (*M* = 7.52, *SD* = 2.63); and (8) juvenile offenders who do not believe that men have a right to expect sex from women (*M* = 5.68, *SD* = 2.88) made statistically significantly (t = -3.63, p < .05; Cohen's d = .77) fewer attributional errors than did their counterparts (*M* = 7.73, *SD* = 2.13). All effect sizes associated with these differences were large. Also, juvenile offenders who made the fewest attributional errors were more likely to report that their families were the primary influence in their lives (r = -.23, p < .05).

All possible subsets (APS) multiple regression (Thompson 1995) was used to identify an optimal combination of at-risk behaviors (i.e., independent variables) that predicted number of attribution

errors made. Using this technique, all possible models involving some or all of the independent variables were examined. This method of analysis has been recommended by many statisticians (e.g., Thompson, 1995). Indeed, in APS regression, separate regressions are computed for all independent variables singly, all possible pairs of independent variables, all possible trios of independent variables, and so forth, until the best subset of independent variables is identified according to some criterion. For this study, the criterion used was the maximum proportion of variance explained (R^2), which provides an important measure of effect size (Cohen, 1988). An additional index used was Mallow's C_p (Myers, 1986; Sen & Srivastava, 1990).

Squared semi-partial correlation coefficients, also known as part correlations, represent the amount by which R^2 is reduced if a particular independent variable is removed from the regression equation. That is, squared semi-partial correlation coefficients express the unique contribution of the independent variable as a proportion of the total variance of the dependent variable (Cohen, 1988). Similarly, squared partial correlation coefficients represent the unique contribution of the independent variable as a proportion of R^2. In this study, squared partial correlation

coefficients, like R^2, were used directly as effect size estimates, as recommended by Cohen (1988). According to Cohen (1988), for multiple regression models in the behavioral sciences, squared partial correlation values between 2% and 12.99% suggest small effect sizes, values between 13% and 25.99% indicate medium effect sizes, and values of 26% and greater suggest large effect sizes. These same criteria were used to assess whether the proportion of variance explained by the independent variables, R^2, was suggestive of a small, medium, or large effect.

The selected model indicated that the following five variables contributed significantly ($F[5, 76] = 4.84$, $p < .001$) to the prediction of the number of attributional errors made: selling drugs, believing that men have a right to expect sex from women, frequency of alcohol use, having friends who died violently, and bringing a gun to school. An inspection of the studentized residuals generated from the model (Myers, 1986) suggested that the assumptions of normality, linearity, and homoscedasticity were met.

The squared semi-partial coefficients indicated that selling drugs was the best predictor of the number of attributional errors, explaining 9.7% of the variance. Believing that men have a right to expect sex from women was the second best predictor, accounting for

6.0% of the variance. Third was frequency of alcohol use, which explained 3.9% of the variance. This was followed by having friends who died violently, which accounted for 2.8% of the variation. Fifth was bringing a gun to school, which explained 1.8% of the variance in the number of attributional errors made. These five variables combined to explain 24.2% of the variation in the number of attributional errors (adjusted R^2 = 19.2). Using Cohen's (1988) criteria for assessing the predictive power of a set of independent variables in a multiple regression model, the proportion of variance explained indicates a moderate-to-large effect size.

Discussion

Daley and Onwuegbuzie (1995, 1999) found that male juvenile offenders tend to make attributional errors when evaluating the behavior of others. Apparently, this population frequently ascribes external explanations to individuals' violent actions. Based on these findings, Daley and Onwuegbuzie (2000a) developed a violence attribution theory, in which attributions toward violence have a predominantly social-psychological context.

Moreover, Daley and Onwuegbuzie (2000a) predicted that violence attribution errors not only would be responsible for violent behaviors, but also for other at-risk behaviors. Thus, the

purpose of the present study was to determine whether at-risk behaviors (e.g., substance abuse, gun ownership, sexual activity) are associated with violence attribution errors among incarcerated male juvenile delinquents. A multiple regression analysis revealed that the following five variables contributed significantly to the prediction of the number of attributional errors made: selling drugs, believing that men have a right to expect sex from women, frequency of alcohol use, having friends who died violently, and bringing a gun to school. These variables explained nearly one-fourth of the variance in the number of attributional errors made.

The present findings provide partial support for Daley and Onwuegbuzie's (2000a) cue-attribution-emotion-behavior-attribution cycle, wherein social cues lead to attributions that influence feelings, which, in turn, serve as antecedents to behavior, which, subsequently affect future attributions made by the actor. In Daley and Onwuegbuzie's (2000a) conceptualization, whereas accurate cognitive appraisals more often lead to positive emotions that culminate in prosocial behavior, attributional errors lead to negative emotions that result in antisocial, at-risk behaviors, which include violence. Violence attributional errors may be exacerbated in situations of attributional ambiguity. Apparently,

adolescents who are prone to make violence attribution errors not only tend to be less competent processors of social information, but also tend to have lower thresholds for emotional arousal following negative social cues. Indeed, compared to their nonaggressive peers, violent children have been found to be less proficient social information processors (Dodge & Crick, 1990) and to have lower tolerance for negative social cues (Parke & Slaby, 1983). These results also provide incremental validity for Daley and Onwuegbuzie's (1995) Violence Attribution Survey.

That violence attribution errors are associated with owning a gun and bringing a gun to school suggests that biased intentionality attributions have the potential to lead to retaliatory behavior (Graham et al., 1992; Hudley & Graham, 1993), which can manifest itself in firearm possession.

The finding that violence attributional errors are associated with selling drugs is consistent with Daley and Onwuegbuzie (1995), who reported that the offenders who sell drugs justify their actions by blaming their "clients" for not resisting such a self-destructive habit. According to these drug dealers, all they are doing is providing a service to drug-dependent individuals. Offenders assert that if drug addicts do not seek their services,

they will request the assistance of others (Daley & Onwuegbuzie, 1995).

The finding that juvenile offenders who believe that men have a right to expect sex from women made significantly higher attributional errors than did their counterparts is consistent with Daley and Onwuegbuzie (2000b), who reported a statistically significant relationship between sex role attitudes and propensity toward violence. Specifically, offenders who reported the most traditional attitudes toward women's rights and roles were more apt to report that they would engage in violent acts if they were certain of not being punished. Furthermore, the link between attributions and school expulsions suggests that attributional errors may play a role in inducing at-risk behaviors that culminate in dismissal from school.

The 24% of total variance in the number of attributional errors made accounted for by the five at-risk variables contained in the selected model represents a moderate effect size. Nevertheless, because nearly 76% of the variance was not explained by the selected variables, there is clearly a need for future research into other correlates of attributional errors. Indeed, this study should be replicated on non-offender adolescents to

determine whether a link between violent misattributions and at-risk attitudes and behaviors exists.

Overall, the current results suggest that at-risk behaviors may affect attributions. Specifically, when an adolescent engages in an antisocial behavior, the consequences of this behavior help to determine whether attributional errors will prevail. For example, a teenager who is suspended from school for hitting a peer might become more convinced that everyone in the school is "out to get him," and thus he may be more likely to make attributional errors in future situations of attributional ambiguity. However, although support has been provided for the end part of the Daley and Onwuegbuzie's (2000a) cue-attribution-emotion-behavior-attribution cycle, the other components of this conceptualization remain untested. Thus, future investigations also should test the front end of the cue-attribution-emotion-behavior-attribution cycle.

As noted by Graham et al. (1992), most interventions that focus on at-risk behavior, such as aggression, have tended to utilize cognitive behavior modification programs patterned after Meichenbaum (1985) and others, in which violent children are taught how to control their emotions via self-talk methods. However, few

interventions incorporate attributional information (Graham et al., 1992). To the extent that responses to cognitive appraisals in general and attributions in particular regulate prosocial and antisocial behaviors that are mediated by emotions, interventions such as affective skills development and attribution retraining may be effective in reducing the onset of at-risk behaviors among adolescents, primarily because they are addressing antecedents of at-risk behaviors at an earlier stage of the cue-attribution-emotion-behavior-attribution cycle, and therefore have the potential not only to reduce at-risk behaviors but also to help adolescents develop more adaptive emotions. This should be the focus of future inquiries. Indeed, some support exists for interventions that include an attributional component (Guerra & Slaby, 1990; Hudley & Graham, 1993; Lochman, Burch, Curry, & Lampron, 1984). In any case, it appears that any future programs should be designed within a social-psychological context.

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